

ATTACHMENT B Amendments to the Claims

Please cancel claim 12 without prejudice or disclaimer.

This listing of claims will replace all prior versions, and listings, of claims in the application.

- 1) (Currently Amended) Equipment for preparing for electrostatic painting three-dimensional articles ~~(P)~~ with a predominantly flat extension, made from dielectric or low-conductivity material, ~~which move on and are supported by said equipment~~ comprising:
_____ a horizontal conveyor (T), characterized in that the conveyor is made from an electrically insulating material, having a resistivity greater than that of the panels (P) articles to be painted and characterized in that painted; and
_____ one or more electrodes (E, 12) are placed in isolated positions, at suitable distances from each other and from the edges of the panels articles, under the said panels articles, at least while the powdered paints electrostatically charged to an electrical potential are being fed on to them, the said one or more electrodes emitting an electrical field with characteristics such that it the electric field charges the whole visible surface of the said panels articles, as far as their area of contact with the horizontal conveyor, to an electrical potential of opposite sign to that of the powdered paints, in such a way that the powdered paints completely and uniformly cover the said visible surface of the panels articles,
_____ said one or more electrodes being of any suitable shape for their intended purpose and positioned under an upper run of the horizontal conveyor, the thickness of

the horizontal conveyor being reduced in order to cause the least possible attenuation of the electrical field generated by said one or more electrodes which are located at least near one or more painting units and can be connected selectively to an electrical generator through at least one switching unit, in such a way that they can be activated selectively, at least in accordance with the dimensions in plan view of the articles to be painted.

2) (Currently Amended) ~~Equipment~~ The equipment according to claim 1, ~~in which the wherein said horizontal conveyor (T) is made from a sufficiently porous material, permeable to air but not to the paint powders.~~

3) (Currently Amended) ~~Equipment~~ The equipment according to claim 2, ~~characterized in that the further comprising suction means to collect and remove dust from a lower return run of the horizontal conveyor (T) is cleaned not only by conventional methods but also with which may be displaced by a jet of pressurized air which passes through the said return run from the interior to the exterior, suction means being provided opposite these means to collect and remove the dust resulting from this cleaning operation.~~

4) (Currently Amended) ~~Equipment~~ The equipment according to claim 1, ~~in which the wherein at least a part of said horizontal conveyor (T) is made, at least in the part in contact with the panels (P) articles to be painted, painted is made from a material~~

whose resistivity is greater by at least one order of magnitude than that of the said panels articles.

5) (Currently Amended) ~~Equipment~~ The equipment according to claim 4, ~~in which~~ the wherein said horizontal conveyor (T) is made wholly or partially from comprises a belt comprising polyethylene.

6) (Currently Amended) ~~Equipment~~ The equipment according to claim 1, ~~in which~~ wherein the electrode (E) electrodes for polarizing the panel articles to be painted is located at a distance from the edge of the said panel articles which is greater than 0.5 to 4 times, ~~and preferably greater than 1 to 2 times,~~ the height (H) of the edge of the said panel (P) articles to be painted.

7) (Currently Amended) ~~Equipment~~ The equipment according to claim 1, ~~in which~~ wherein the electrode (E) for polarizing the panel articles to be painted is located at a distance from the edge of the said panel articles which is not more than 5 to 20 times, ~~and preferably not more than approximately 10 times,~~ the height (H) of the edge of the said panel (P) articles.

8) (Currently Amended) ~~Equipment~~ The equipment according to claim 1, ~~in which,~~ wherein when the shape of the panels (P) articles is such that they have the articles have to be acted on by a plurality of said one or more electrodes (E), the distance

between the ~~said~~ plurality of electrodes is not less than 5 to 20 times, and preferably not less than approximately 10 times, the height H of the edge of the ~~said panel (P)~~ articles.

9) (Currently Amended) ~~Equipment~~ The equipment according to claim 1, ~~in which~~ wherein the one or more electrodes ~~(E)~~ are of any suitable shape for their intended purpose, are fixed with a precise distribution to the conveyor ~~(T)~~ so that they are as close as possible to or directly in contact with the ~~panel~~ articles to be painted, and are connected, by means of extensions or by means of electrical conductors ~~(N)~~ connected to them, to corresponding fixed contacts ~~(Q)~~ connected to ~~the~~ a lower face and/or to the edges of the horizontal conveyor, where ~~the~~ said contacts are distributed in rows for interaction with ~~the~~ power supply collectors ~~(Y)~~ which are supplied selectively, according to the dimensions of the ~~panels~~ articles to be painted, by at least one switching unit ~~(K)~~ connected to ~~the~~ an electrical generator ~~(X)~~.

10) (Currently Amended) ~~Equipment~~ The equipment according to claim 9, ~~in which~~ the wherein said collectors ~~(Y)~~ and the switching and power supply units ~~(K, X)~~ are fixed.

11) (Currently Amended) ~~Equipment~~ The equipment according to claim 9, ~~in which~~ the wherein said collectors ~~(Y)~~ are movable with forward and return reciprocating movements in the direction of the movement of the ~~panels~~ articles to be painted.

12) (Canceled)

13) (Currently Amended) ~~Equipment~~ The equipment according to ~~claim 12~~, in which the claim 1, wherein the one or more electrodes ~~(E)~~ are mounted on motorized sliders ~~(S)~~ by means of which their position can be adjusted in space, for better adaptation to the dimensions in plan view of the ~~panels~~ articles to be painted.

14) (Currently Amended) ~~Equipment~~ The equipment according to ~~claim 12~~, in which claim 1, wherein the one or more electrodes ~~(E)~~ are fixed.

15) (Currently Amended) ~~Equipment~~ The equipment according to ~~claim 12~~, in which claim 1, wherein the one or more electrodes ~~(E)~~ are mounted on structures by means of which the said one or more electrodes can be given a cyclical forward and return movement in the direction of the movement of the ~~panels~~ articles to be painted.

16) (Currently Amended) ~~Equipment~~ The equipment according to claim 15, in which the wherein said means of movement are means ~~(S)~~ of reciprocating rectilinear movement.

17) (Currently Amended) ~~Equipment~~ The equipment according to claim 15, in which the wherein said means of movement are means ~~(M)~~ of continuous movement of the a closed conveyor type and the one or more electrodes are connected to the a switching and power supply source ~~(K, X)~~ by means of collectors ~~(Y)~~ of the having a sliding contact or other suitable type.

18) (Currently Amended) ~~Equipment~~ The equipment according to ~~claim 12, in which~~ claim 1, wherein means are provided for controlling the operation of the one or more electrodes in accordance with the dimensions and the positioning in space of the ~~panels~~ articles to be painted and these means comprise ~~a one of the switching unit (K) units~~ a one of the switching-unit (K) units connected to the electrical ~~polarization~~ generator (X) and controlled by a processor (L) which receives ~~the~~ information on the dimensions of the ~~panels~~ articles from optoelectronic means (B) located up-line from the a paint chamber (C) and which receives from an encoder (G) the information on the speed of advance of the conveyor (T), horizontal conveyor, said means being provided to enable the said processor to operate with access to the information on the position in space ~~at~~ of any moment of the ~~panel~~ articles to be painted.

19) (Currently Amended) ~~Equipment~~ The equipment according to claim 1, characterized in that the ~~belt~~ wherein said horizontal conveyor (T) for advancing the ~~articles to be painted has~~ comprises a conveyor belt having a thickness which is restricted as much as possible and ~~is being~~ is in the range from 0.5 to 3 mm, ~~for example~~ approximately 0.8 mm.

20) (Currently Amended) ~~Equipment~~ The equipment according to claim 19, ~~in which~~ the belt conveyor (T) is formed from wherein said conveyor belt comprises a polyester fabric core ~~or equivalent material~~, impregnated with polyurethane ~~or equivalent material~~, and is coated at least on its upper face with polyurethane ~~or equivalent material~~, in such

a way that it has a perfectly smooth outer surface which is particularly suitable for cleaning with mechanical and pneumatic means which operate according to the prior art on the a return run of the conveyor belt-conveyor.

21) (Currently Amended) ~~Equipment~~ The equipment according to claim 20, in which wherein the polyurethane-layer coating is approximately 0.2 mm thick.

22) (Currently Amended) ~~Equipment~~ The equipment according to claim 19, in which the wherein said conveyor belt comprises an upper run of the conveyor belt (T) which slides on and is supported by a flat horizontal bed (7) supported by the a frame of the machine and made, for example, from polypropylene and/or any said equipment, said bed comprised of an electrically insulating material, which has a resistivity greater than that of ~~MDF~~ the articles to be painted and which is coated on the face in contact with the said conveyor belt (T) with at least one sheet (8) of the same material as that of the conveyor belt (T).

23) (Currently Amended) ~~Equipment~~ The equipment according to claim 19, in which the wherein said one or more electrodes (12) are mounted at equal distances from each other and in such a way that they can be activated and de-activated, on one or more rectilinear closed conveyors (9) of the horizontal axis type, which are conveyors, said rectilinear conveyors made from electrically insulating material, are positioned longitudinally under the an upper run of the said conveyor belt-conveyor (T), move in the same direction and at the same speed as this said horizontal conveyor (T), and have a

length such that they follow the ~~panels~~ articles positioned above them throughout the a painting cycle.

24) (Currently Amended) ~~Equipment~~ The equipment according to claim 23, ~~in which the conveyor (9) of the electrodes~~ wherein said one or more rectilinear conveyors takes its motion from the a transmission system ~~(3)~~ which also drives the said belt of said horizontal conveyor (T) of the painting machine.

25) (Currently Amended) ~~Equipment~~ The equipment according to claim 22, ~~in which the further comprising a bed (7, 8) supporting the upper run of the conveyor (T) has said horizontal conveyor, said bed having at least one longitudinal aperture (107) which leaves free the portion of the said horizontal conveyor on which the one or more electrodes (12) for polarizing the articles to be painted (P) can act by contact.~~

26) (Currently Amended) ~~Equipment~~ The equipment according to claim 22, ~~in which the conveyor (9) wherein said one or more rectilinear conveyors which carries the which carry said one or more electrodes is formed from a chain of links (109) of electrically insulating material, which carry carry, at constant intervals intervals, projecting appendages (209), also made from electrically insulating material, on which are pivoted pivoted, by their forked ends ends, metal levers (112) each of which carries integrally and transversely on its other end end, a metal head (12) which forms the actual electrode for polarizing the panels, the articles, said lever (112) metal levers being pivoted on the said supporting appendage (209) appendages by means of a~~

freely rotatably metal pin-(13) which has at one end a small lever-(113) which terminates in a rounded end and which is constantly orientated downwards by gravity or by the action of suitable means and which while travelling along the upper run of the one rectilinear conveyor in question slides on a linear metal collector-(20) connected to the voltage said electrical generator-(X) for the necessary polarization of the one or more electrodes.

27) (Currently Amended) ~~Equipment~~ The equipment according to claim 23, ~~in which the wherein said one or more~~ electrodes attached to the ~~conveyor (9)~~ said one or more rectilinear conveyors are spaced apart from each other ~~at decimal intervals, for example on the order of~~ 10 to 20 cm.

28) (Currently Amended) ~~Equipment~~ The equipment according to claim 26, ~~in which the wherein said~~ metal head-(12) of the ~~said oscillating metal lever (112), which forms the actual electrode, is for example~~ is formed from a length of tubular section with a rectangular cross section, orientated in such a way that, as it travels along the upper run of the ~~conveyor (9), said one or more rectilinear conveyors,~~ if the electrode is to be in the high active position, the said metal head-(12) uniformly touches the a lower face of the ~~belt~~ said horizontal conveyor-(T) with one of its larger faces.

29) (Currently Amended) ~~Equipment~~ The equipment according to claim 26, ~~in which the electrode (12) has~~ wherein said one or more electrodes have approximately the following dimensions: 20 x 10 x 65 mm.

30) (Currently Amended) ~~Equipment~~ The equipment according to claim 26, ~~in which there is provided, further comprising~~ under the lower run of ~~the electrode conveyor (9)~~ said one or more rectilinear conveyors and parallel to it, a fixed guide ~~(14)~~, made from electrically insulating material at least in its upper part and having a curved initial portion ~~(114)~~ for collecting ~~the~~ said one or more electrodes leaving the upper run of the corresponding conveyor, ~~this~~ said fixed guide having the function of preventing ~~the~~ said one or more electrodes from oscillating in an unnecessary and dangerous way along the return path, and positioning ~~the~~ said one or more electrodes correctly for interaction with a metal brush ~~(15)~~ connected to ~~earth~~ ground for eliminating any residual voltage on ~~the~~ said one or more electrodes before their return to the upper run of ~~the conveyor (9)~~ said one or more rectilinear conveyors.

31) (Currently Amended) ~~Equipment~~ The equipment according to claim 26, ~~in which each of the wherein said one or more electrodes (12) carries~~ carry on at least one end an integral skid ~~(212)~~ made from electrically insulating material and with a low coefficient of friction, which, during the movement of ~~the~~ said one or more electrodes, interacts with guide means which place ~~the~~ said one or more electrodes correctly in the active or passive position in which they contact or do not contact the upper run of ~~the belt~~ said horizontal conveyor ~~(T) of the painting machine~~.

32) (Currently Amended) ~~Equipment~~ The equipment according to claim 26, ~~in which~~ further comprising a fixed cam in the form of a sector of a circle ~~(16)~~, preferably made

from electrically insulating material, is provided and coaxially with the a return shaft (10') of the electrode conveyor (9), this said one or more conveyors, said fixed cam interacting with the end skids (212) of the said an end skid of said one or more electrodes (12) which, as a result of this interaction, are kept away from the said links (109) of the chain of the said conveyor, to ensure that these said links have a freedom of relative movement on the curved path around the said return shaft.

33) (Currently Amended) ~~Equipment~~ The equipment according to claim 26, ~~in which~~ further comprising an inclined plane cam (17) ~~is provided in the initial part located~~ proximate start of the upper run of the electrode conveyor (9), this said one or more rectilinear conveyors, said inclined plane cam being transferable by an actuator (18) from a high position to a low position at the command of the a processor which controls the operation of the machine and which, ~~additionally~~ said equipment, said processor acting on the basis of the data received from an optoelectronic barrier (B) ~~or other means which detects the dimensions of the panels (P)~~ articles to be painted on entry into the a painting machine and on the basis of data received from a sensor (148) which detects the phase of the electrodes (12), decides whether the said one or more electrodes cyclically reaching the upper position are to be activated or not, and therefore whether the said inclined plane cam is to be in the high or low position respectively.

34) (Currently Amended) ~~Equipment~~ The equipment according to claim 33, ~~in which~~ the initial part, wherein said start of the upper run is suitably tapered to form a lead-in, of

a first linear guide (19), preferably made from electrically insulating material, is and provided down-line from the a movable inclined plane cam (17) when the latter is in the a high position, the said linear guide being fixed to the frame of the conveyor in question, parallel to the said conveyor, the end skids (212) of the said one or more electrodes (12) rising on to and sliding along the said guide and thus being raised and kept in contact with the conveyor belt (T), another said horizontal conveyor, a second fixed guide (19'), also made from electrically insulating material and with having a low coefficient of friction, being provided opposite the said first linear guide (19) and parallel thereto, the other ends of the said one or more electrodes (12) sliding and bearing directly, or with the interposition of an additional skid, on the said second guide (19'), and thus advancing with a uniformly distributed and constant contact with the said horizontal conveyor (T) above them.

35) (Currently Amended) Equipment The equipment according to claim 33, in which, wherein if the said wedge-shaped guide (17) inclined plane cam is in the low position, the said one or more electrodes (12) advance in the low position, each in contact with a link of the corresponding conveyor (9) one of said rectilinear conveyors, in a position suitably distant from the said horizontal conveyor (T) of the painting machine.

36) (Currently Amended) Equipment The equipment according to claim 26, in which the further comprising pivot pins (13) of the of said metal levers (112) carrying the said one or more electrodes (12) and carrying at their ends the small levers (113) for making contact with the linear collector (20) for polarizing the said one or more electrodes, are

axially movable and each is provided, at the opposite end from the ~~lever (113)~~, small levers with a head ~~(213)~~, and means are provided for changing the position in space of these pins, to ensure that only the ~~lever (13)~~ small levers of each electrode which is to be in the high active position touches the said collector ~~(20)~~, while the ~~lever~~ levers of each electrode in the low and inactive position follows a path to one side of and distant from the said collector, so that the corresponding electrodes are not polarized.

37) (Currently Amended) ~~Equipment~~ The equipment according to claim 36, ~~characterized in that, wherein~~ before leaving the lower run of the ~~electrode~~ one of said rectilinear conveyor (9), the ~~end lever (113)~~ small levers of each pivot pin ~~(13)~~ of the said one or more electrodes which has previously left a stage of interaction with the upper said collector ~~(20)~~ interacts with a linear fixed cam ~~(21)~~ made from electrically insulating material, which forces the said pivot pin to move axially so that the ~~lever (113)~~ small levers are brought closer to the ~~supporting~~ said projecting appendage ~~(209)~~, in such a way that all the small levers (113) which are leaving the lower run of the ~~electrode conveyor (9)~~ one of said rectilinear conveyors and which are about to rise to the upper run are positioned on the links ~~(109)~~ of this conveyor and consequently to one side of and distant from the position in space occupied by the ~~said polarization collector (20)~~.

38) (Currently Amended) ~~Equipment~~ The equipment according to claim 37, ~~characterized in that there is provided, in the initial part~~ further comprising, at the start of the upper run of the electrode conveyor (9) said one or more rectilinear conveyors, an

exchange device-(22) which, at the command of the a processor, moves axially the pivot pins-(13) of only those one or more electrodes-(12) which are to remain in the high active position, in such a way that the small levers-(113) of these pins move along a trajectory of interaction with the ~~linear polarization collector-(20)~~.

39) (Currently Amended) ~~Equipment~~ The equipment according to claim 38, ~~in which~~ the wherein said exchange device-(22) comprises a right-angled lever-(122) pivoted on a vertical axis-(222) and connected to an oscillation actuator-(322) which, when commanded, can move the said right-angled lever from the resting position, in which it does not interfere with the pivot pins-(13) of the one or more electrodes, to the active position in which one arm of this said right-angled lever is inclined so that it interferes with the heads-(213) of the said pins-(13), to subject them to the axial movement which causes the corresponding small lever-(113) to interact with the ~~linear polarization collector-(20)~~ of the one or more electrodes.

40) (Currently Amended) ~~Equipment~~ The equipment according to claim 19, ~~in which~~ the wherein said one or more electrodes-(E) for polarizing the ~~panels~~ articles to be painted are fixed on the a bed-(7) which supports the upper run of the horizontal conveyor-(T) ~~for advancing the said panels~~ and are positioned at isolated points located one after the other in at least one row whose length is suitably greater than the length of the a paint chamber-(C) and which is orientated along the longitudinal axis of this said chamber.

41) (Currently Amended) ~~Equipment~~ The equipment according to claim 40, ~~in which~~
the wherein a row of one or more electrodes (E) can be positioned with a slight
inclination in the range from 0° to 15°, ~~for example approximately 7°~~, with respect to the
longitudinal axis of the horizontal conveyor (T), in such a way that ~~the said one or more~~
electrodes are arranged progressively in different positions with respect to the edges of
the ~~panels~~ articles to be painted, to ensure that the ~~panels~~ articles are correctly and
uniformly covered with paint.

42) (Currently Amended) ~~Equipment~~ The equipment according to claim 40, ~~in which~~
the wherein said one or more electrodes (E) can be positioned in different ways on the
vertices of a broken line which forms ~~a wave of the alternating type~~, an alternating
wave, with the horizontal axes suitably inclined with respect to the longitudinal axis of
the horizontal conveyor (T), in such a way that ~~the said one or more~~ electrodes are also
widely distributed over the width of the said horizontal conveyor (T) for advancing the
articles to be painted.

43) (Currently Amended) ~~Equipment~~ The equipment according to claim 40, ~~in which~~
the wherein said one or more electrodes (E) are suitably spaced apart from each other,
~~for example by distances of approximately 5 to 20 times, for example approximately 10~~
~~times~~, the height of the edges of the ~~panels~~ articles to be painted.

44) (Currently Amended) ~~Equipment~~ The equipment according to claim 40, ~~in which~~
the wherein said one or more electrodes (E) can be made in the form of screws with flat

countersunk heads, with hexagonal sockets, and with shanks of suitable diameter, ~~for example in the range from 5 to 15 mm.~~

45) (Currently Amended) ~~Equipment~~ The equipment according to claim 44, ~~in which the wherein said screws forming the electrodes (E) are fixed in holes formed in the said bed (7) above which the upper run of the horizontal conveyor (T) slides, in such a way that the flat faces of their heads are coplanar with the upper face of the said bed (7).~~

46) (Currently Amended) ~~Equipment~~ The equipment according to claim 44, ~~in which the wherein said screws forming the electrodes (E) are fixed in holes formed in the bed (7) and in the a corresponding upper cover (8) above which the upper run of the horizontal conveyor (T) slides, in such a way that the flat faces of their heads are essentially in contact with the said horizontal conveyor (T) for advancing the panels articles.~~

47) (Currently Amended) ~~Equipment~~ The equipment according to claim 40, ~~in which further comprising means are provided for ensuring that the one or more electrodes (E) of each row are all constantly connected to the a polarization generator.~~

48) (Currently Amended) ~~Equipment~~ The equipment according to claim 40, ~~characterized in that further comprising means are provided for modulating the activation and inactivation of the one or more electrodes (E) of each row in accordance with the variations of the positions above them of the panel articles to be painted, which~~

moves continuously, in such a way that the said one or more electrodes, in the active phase, are never active at critical distances or too close to the edges of the panels articles.

49) (Currently Amended) Equipment The equipment according to claim 48, ~~in which~~ the wherein said one or more electrodes ~~(E)~~ can be connected to the a polarization source ~~(X)~~ through a switching unit ~~(K)~~ controlled by a processor unit ~~(L)~~ which receives from the an optoelectronic barrier ~~(B)~~ and from an encoder ~~(G)~~ the data relating to the dimensions and speed and consequently to the position in space of the panels articles to be painted.

50) (Currently Amended) Equipment The equipment according to claim 49, ~~in which~~ the wherein said switching unit ~~(K)~~ comprises static electric switches ~~of the static~~ electronic type.

51) (Currently Amended) Equipment The equipment according to claim 49, ~~in which~~ the wherein said switching unit ~~(K)~~ comprises dynamic switches ~~of the dynamic type,~~ consisting ~~for example of~~ comprising small cylinder and piston units ~~(27)~~, located under the screws forming the said one or more electrodes ~~(E)~~, having their rods aligned and orientated against these said screws and holding, with the interposition of an insulating support, an electrical contact ~~(28)~~ connected to the said polarization unit ~~(X)~~.

52) (Currently Amended) ~~Equipment~~ The equipment according to claim 40, ~~in which the wherein a terminal part (T') of the horizontal conveyor (T) has a downward inclination and continues to be supported by the a bed (7, 8), while there is provided above this final inclined portion (101) said downward inclination, a wedge-shaped conveyor (29) of suitable material, whose upper run is coplanar with and immediately consecutive to the horizontal run of the said horizontal conveyor (T) and advances in such a direction and at such a speed that it collects and removes the painted-panel articles.~~

53) (Currently Amended) ~~Equipment~~ The equipment according to claim 52, ~~in which further comprising means are provided to clean the paint from the said wedge-shaped conveyor (29).~~

54) (Currently Amended) ~~Equipment~~ The equipment according to claim 1, ~~in which the further comprising a polarization generator (X) of the electrodes (12) can generate for generating a continuous voltage which can vary from 0 to 100 kV, with a useful value, for example, in the region of 60 kV, and with a current measurable in microamperes, for example approximately 500 A.~~

55) (Currently Amended) ~~Equipment~~ The equipment according to claim 19, ~~characterized in that, since the conveyor belt (T) is very thin and thus relatively elastic, and consequently sensitive to the resistances which it encounters during its advance, which are not balanced and symmetrically distributed, and therefore the said conveyor~~

tends to slip sideways, further comprising automatic means are provided to keep it said conveyor belt correctly-centred centered and guided on the corresponding return rollers ~~(2, 2')~~.

56) (Currently Amended) ~~Equipment~~ The equipment according to claim 55, characterized in that the wherein a driven end of the conveyor belt (T) of the painting machine said conveyor belt runs over a pair of parallel static rollers, one of said pair above the other ~~(2')~~, supported rotatably by the a fixed frame ~~(1)~~ of the machine of said equipment, and over a third roller ~~(102)~~ which forces the conveyor said conveyor belt to form a re-entrant bend and which is located between the aforesaid said pair of parallel rollers ~~(2')~~ or after the lower said third roller and is parallel to these, but is mounted rotatably at each end on the intermediate part of a corresponding lever ~~(23)~~ lever, one end of which is pivoted on the said fixed frame ~~(1)~~ frame, and the other end of which is connected to an oscillation actuator ~~(25)~~, of the pneumatic type for example, connected to an operating circuit with the interposition of a unit ~~(26)~~ having a feeler ~~(126)~~ which senses the position in space of the side of the conveyor ~~(T)~~ belt adjacent to the said lever ~~(23)~~, the whole system being designed in such a way that if the conveyor belt moves outwards and causes the said feeler ~~(126)~~ to be bent outwards, the unit ~~(26)~~ switches and causes the temporary retraction of the rod of the said oscillation actuator ~~(25)~~ through a predetermined distance which returns the conveyor ~~(T)~~ belt to its track, causing a reduction of the force on the said feeler ~~(126)~~ and the switching back of the said unit ~~(26)~~ which returns the oscillation actuator ~~(25)~~ to the resting position.

57) (Currently Amended) ~~Equipment~~ The equipment according to claim 23, characterized in that wherein, if the said conveyor belt conveyor (T) of the painting machine has a width such that it can accommodate ~~panels~~ articles which may be of considerable width, where movable electrodes are used, a plurality of said rectilinear conveyors (9) with corresponding one or more electrodes (12) can be positioned side by side and in a parallel arrangement under the upper run of the said horizontal conveyor, with a distance between the electrodes of one ~~conveyor~~ said rectilinear conveyor and those of the ~~neighbouring conveyor~~ neighboring one of said rectilinear conveyors which is not less than that between the electrodes of each ~~conveyor~~ said rectilinear conveyors, and/or with the one or more electrodes of one said rectilinear conveyor staggered if necessary with respect to those of the ~~adjacent~~ neighboring rectilinear conveyor, and means are provided for selectively activating these said rectilinear conveyors (9) and/or the corresponding movable electrodes (12) in accordance with the dimensions of the ~~panels~~ articles to be painted.

58) (Currently Amended) ~~Equipment~~ The equipment according to claim 40, characterized in that wherein, if the said conveyor belt conveyor (T) of the painting machine has a width such that it can accommodate ~~panels~~ articles which may be of considerable width, where fixed electrodes are used, a plurality of rows of the one or more electrodes (E) can be positioned side by side, with a distance between the electrodes of one row and those of the ~~neighbouring~~ neighboring row not less than that between the one or more electrodes of each row, and/or with the one or more electrodes of one row staggered if necessary with respect to those of the adjacent row,

and means are provided for selectively activating the rows of fixed one or more electrodes ~~(E)~~ in accordance with the dimensions of the ~~panels~~ articles to be painted.

59) (New) Equipment for preparing for electrostatic painting three-dimensional articles with a predominantly flat extension, made from dielectric or low-conductivity material, said equipment comprising:

a horizontal conveyor made from an electrically insulating material, having a resistivity greater than that of the articles to be painted; and

one or more electrodes placed in isolated positions, at suitable distances from each other and from the edges of the articles, under the articles, at least while powdered paints electrostatically charged to an electrical potential are being fed on to them, said one or more electrodes emitting an electrical field with characteristics such that the electric field charges the whole visible surface of the articles, as far as their area of contact with the horizontal conveyor, to an electrical potential of opposite sign to that of the powdered paints, in such a way that the powdered paints completely and uniformly cover the visible surface of the articles,

wherein the one or more electrodes are of any suitable shape for their intended purpose, are fixed with a precise distribution to the horizontal conveyor so that they are as close as possible to or directly in contact with the articles to be painted, and are connected, by means of extensions or by means of electrical conductors connected to them, to corresponding fixed contacts connected to a lower face and/or to the edges of the horizontal conveyor, where said contacts are distributed in rows for interaction with power supply collectors which are supplied selectively, according to the dimensions of

the articles to be painted, by at least one switching unit connected to an electrical generator.

60) (New) Equipment for preparing for electrostatic painting three-dimensional articles with a predominantly flat extension, made from dielectric or low-conductivity material, said equipment comprising:

a horizontal conveyor made from an electrically insulating material, having a resistivity greater than that of the articles to be painted, said horizontal conveyor having a thickness which is restricted as much as possible and is in the range from 0.5 to 3 mm, said conveyor comprising a conveyor belt comprising a polyester fabric core, impregnated with polyurethane material, and coated at least on its upper face with polyurethane material, in such a way that it has a perfectly smooth outer surface which is suitable for cleaning with mechanical and pneumatic means which operate on a return run of the belt; and

one or more electrodes placed in isolated positions, at suitable distances from each other and from the edges of the articles, under the articles, at least while powdered paints electrostatically charged to an electrical potential are being fed on to them, said one or more electrodes emitting an electrical field with characteristics such that the electric field charges the whole visible surface of the articles, as far as their area of contact with the horizontal conveyor, to an electrical potential of opposite sign to that of the powdered paints, in such a way that the powdered paints completely and uniformly cover the visible surface of the articles,

61) (New) Equipment for preparing for electrostatic painting three-dimensional articles with a predominantly flat extension, made from dielectric or low-conductivity material, said equipment comprising:

a horizontal conveyor made from an electrically insulating material, having a resistivity greater than that of the articles to be painted, said horizontal conveyor having a thickness which is restricted as much as possible and is in the range from 0.5 to 3 mm, said conveyor comprising a conveyor belt comprising an upper run which slides on and is supported by a flat horizontal bed supported by a frame of said equipment, said bed comprised of an electrically insulating material, which has a resistivity greater than that of the articles and which is coated on the face in contact with said conveyor belt with at least one sheet of the same material as that of the belt; and

one or more electrodes placed in isolated positions, at suitable distances from each other and from the edges of the articles, under the articles, at least while powdered paints electrostatically charged to an electrical potential are being fed on to them, said one or more electrodes emitting an electrical field with characteristics such that the electric field charges the whole visible surface of said articles, as far as their area of contact with the conveyor, to an electrical potential of opposite sign to that of the powdered paints, in such a way that the powdered paints completely and uniformly cover the visible surface of the articles.

62) (New) Equipment for preparing for electrostatic painting three-dimensional articles with a predominantly flat extension, made from dielectric or low-conductivity material, said equipment comprising:

a horizontal conveyor made from an electrically insulating material, having a resistivity greater than that of the articles to be painted, said horizontal conveyor having a thickness which is restricted as much as possible and being in the range from 0.5 to 3 mm; and

one or more electrodes placed in isolated positions, at suitable distances from each other and from the edges of the articles, under the articles, at least while powdered paints electrostatically charged to an electrical potential are being fed on to them, said one or more electrodes emitting an electrical field with characteristics such that the electric field charges the whole visible surface of said articles, as far as their area of contact with the conveyor, to an electrical potential of opposite sign to that of the powdered paints, in such a way that the powdered paints completely and uniformly cover the visible surface of the articles, said one or more electrodes are mounted at equal distances from each other and in such a way that they can be activated and de-activated, on one or more rectilinear closed conveyors, said rectilinear conveyors comprising electrically insulating material, positioned longitudinally under an upper run of a belt of said horizontal conveyor, move in the same direction and at the same speed as said horizontal conveyor, and have a length such that they follow the articles positioned above them throughout a painting cycle.

63) (New) Equipment for preparing for electrostatic painting three-dimensional articles with a predominantly flat extension, made from dielectric or low-conductivity material, said equipment comprising:

a horizontal conveyor made from an electrically insulating material, having a resistivity greater than that of the articles to be painted, said horizontal conveyor having a thickness which is restricted as much as possible and being in the range from 0.5 to 3 mm; and

one or more electrodes placed in isolated positions, at suitable distances from each other and from the edges of the articles, under the articles, at least while powdered paints electrostatically charged to an electrical potential are being fed on to them, said one or more electrodes emitting an electrical field with characteristics such that the electric field charges the whole visible surface of said articles, as far as their area of contact with the conveyor, to an electrical potential of opposite sign to that of the powdered paints, in such a way that the powdered paints completely and uniformly cover the visible surface of the articles, said one or more electrodes for polarizing the articles to be painted are fixed on a bed which supports the upper run of the horizontal conveyor and are positioned at isolated points located one after the other in at least one row whose length is suitably greater than the length of a paint chamber and which is orientated along the longitudinal axis of said chamber.